METHOD, SYSTEM, AND SOFTWARE FOR SIGNAL PROCESSING USING PYRAMIDAL DECOMPOSITION

ABSTRACT OF THE DISCLOSURE

A method, system, and software are disclosed for improving the quality of a signal. A base signal is recursively decomposed and modified for a desired number of pyramid levels. At each level, the decomposed signal from the previous level is modified to improve one or more signal components or characteristics. The modified signal from a given level is then decomposed for the next level of the pyramidal decomposition for each pyramid level. Starting at the second to last level of the pyramidal decomposition, the improved signal of the last pyramid level is recomposed and then combined with one or more signals from the current pyramid level, resulting in an improved signal for the current level. The recomposition and combination of the improved signal of the previous level occurs for each level until the top, or level 0, of the pyramidal decomposition is reached. The improved base signal may or may not be combined with the original base signal, depending on the desired outcome. The present invention finds particular application in photography and digital film processing, whereby the illustrated method may be used to improve image quality.

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